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| QUALCOMM INCORPORATED 5775 MOREHOUSE DR. SAN DIEGO, CA 92121 | | | EXAMINER ETTEHADIEH, ASLAN | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/783,771

Applicant(s)

ODENWALDER, JOSEPH P.

Examiner

Aslan Ettehadieh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 04/24/2007 have been fully considered but they are not persuasive.

Applicant's arguments regarding claims 1, 12, 23, and 34, *Kim, Wiberg, nor Proctor discloses configured to cover different portions of an initial data stream comprising an I/Q pair of modulated symbols to be transmitted on a first wireless communication channel with at least two different spreading codes (claim 1); configured to decode different portions of an initial data stream comprising an I/Q pair of modulated symbols using at least two different spreading codes (claim 12); covering different portions of an initial data stream comprising an I/Q pair of modulated symbols with at least two different spreading codes (claim 23); and decoding different portions of the initial data stream comprising an I/Q pair of modulated symbols using at least two different spreading codes (claim 34).* Contrary to applicant's assertion, Kim discloses covering / decoding different portions of an initial data stream comprising an I/Q pair of modulated symbols using at least two different spreading codes (abstract, figures 1, 3; col. 3 lines 26 – 49, where the I channel is being interpreted as a portion of the initial data stream and the Q as a different portion of an initial data stream, or vise versa). Wiberg discloses covering / decoding different portions of an initial data stream comprising an I/Q pair of modulated symbols using at least two different spreading codes (figures 2, 8, 9; paragraph 25, where the I channel is being interpreted as a portion of the initial data stream and the Q as a different portion of an initial data stream,

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or vise versa). Proctor discloses covering / decoding different portions of an initial data stream comprising an I/Q pair of modulated symbols using at least two different spreading codes (figure 1 – 4; paragraphs 42, 56 – 63, where the I channel is being interpreted as a portion of the initial data stream and the Q as a different portion of an initial data stream, or vise versa).

Claim Rejections - 35 USC § 102

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1 – 6, 8, 12 – 14, 16 – 17, 19, 23 – 28, 30, 34 – 36, 38 – 39, and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al. (US 6219374).
2. Regarding claim 1, Kim discloses a transmitter operable to communicate with a receiver via a wireless communication channel, wherein the transmitter comprises: a processing subsystem (figure 1); and a transmitter subsystem coupled to the processing subsystem (figure 1); wherein the processing subsystem is configured to cover different portions of an initial data stream comprising an I/Q pair of modulated symbols to be transmitted on a first wireless communication channel with at least two different spreading codes (figure 1, col. 3 lines 26 – 49); and wherein the transmitter subsystem is configured to transmit a resulting final data stream on a first wireless communication channel (figure 1, col. 3 lines 26 – 49).

3. Regarding claim 2, Kim further discloses the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 1, col. 3 lines 26 – 49; where element 101 is being interpreted as a demultiplexer).

4. Regarding claim 3, Kim further discloses the processing subsystem is configured to cover each of the plurality of intermediate data streams with one of a set of spreading codes, wherein the set of spreading codes includes the at least two different spreading codes (figure 1, col. 3 lines 26 – 49).

5. Regarding claim 4, Kim further discloses the processing subsystem is configured to multiplex the plurality of intermediate data streams into the final data stream (figure 1, col. 3 lines 26 – 49; where the connection proceeding elements 110 and 111 and preceding element 112 is being interpreted as multiplex).

6. Regarding claim 5, Kim further discloses the spreading codes are different-length spreading codes (figure 1, col. 3 lines 26 – 49; where it is well known in the art that different spreading factors means different code lengths).

7. Regarding claim 6, Kim further discloses the spreading codes are Walsh codes (figure 1, col. 3 lines 26 – 49).

8. Regarding claim 8, Kim further discloses the initial data stream comprises a stream of symbols (figure 1, col. 3 lines 26 – 49).

9. Regarding claim 12, Kim discloses a receiver operable to communicate with a transmitter via a wireless communication channel, wherein the receiver comprises: a processing subsystem (figures 1, 3); and a receiver subsystem coupled to the

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processing subsystem (figures 1, 3); wherein the receiver subsystem is configured to receive an initial data stream via a first wireless communication channel (figures 1, 3, col. 4 lines 10 – 64); and wherein the processing subsystem is configured to decode different portions of an initial data stream comprising an I/Q pair of modulated symbols using at least two different spreading codes (figures 1, 3, col. 4 lines 10 – 64).

10. Regarding claim 13, Kim further discloses wherein the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 3, col. 4 lines 10 – 64; where the connection proceeding element $r(t)$ and preceding elements 301 and 302 is being interpreted as a demultiplexer).

11. Regarding claim 14, Kim further discloses the processing subsystem is configured to decode each of the intermediate data streams using one of a set of spreading codes, wherein the set of spreading codes includes the at least two different spreading codes (figure 3, col. 4 lines 10 – 64).

12. Regarding claim 16, Kim further the spreading codes are different-length spreading codes (figure 3, col. 4 lines 10 – 64; where it is well known in the art that different spreading factors means different code lengths).

13. Regarding claim 17, Kim further discloses the spreading codes are Walsh codes (figure 3, col. 4 lines 10 – 64).

14. Regarding claim 19, Kim further discloses the decoded data stream comprises a stream of symbols (figure 3, col. 4 lines 10 – 64)

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15. Regarding claims 23 – 28, 30, 34 – 36, 38 – 39, and 41, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claims 1 – 6, 8, 12 – 14, 16 – 17, 19 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claims 1 – 6, 8, 12 – 14, 16 – 17, 19, respectively.

16. Claims 1 – 10 and 23 – 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Wiberg et al. (US 2002/0172264).

17. regarding claim 1, Wiberg discloses a transmitter operable to communicate with a receiver via a wireless communication channel, wherein the transmitter comprises: a processing subsystem (figure 2); and a transmitter subsystem coupled to the processing subsystem (figure 2); wherein the processing subsystem is configured to cover different portions of an initial data stream comprising an I/Q pair of modulated symbols to be transmitted on a first wireless communication channel with at least two different spreading codes (figure 2, paragraph 25); and wherein the transmitter subsystem is configured to transmit a resulting final data stream on a first wireless communication channel (figure 2, paragraph 25).

18. Regarding claim 2, Wiberg further discloses the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 2, paragraph 25; where element 215 is being interpreted as a demultiplexer).

19. Regarding claim 3, Wiberg further discloses the processing subsystem is configured to cover each of the intermediate data streams with one of a set of spreading codes, wherein the set of spreading codes includes the at least two different spreading codes (figure 2, paragraph 25).

20. Regarding claim 4, Wiberg further discloses the processing subsystem is configured to multiplex the intermediate data streams into the final data stream (figure 2, paragraph 25; where the adder is being interpreted as multiplex).

21. Regarding claim 5, Wiberg further discloses the spreading codes are different-length spreading codes (figure 2, paragraph 25; where it is well known in the art that different spreading factors means different code lengths).

22. Regarding claim 6, Wiberg further discloses the spreading codes are Walsh codes (figure 2, paragraphs 25, 41, 44).

23. Regarding claim 7, Wiberg further discloses the spreading codes comprise +-and ++-- codes (figures 2, 3, paragraphs 25, 26).

24. Regarding claim 8, Wiberg further discloses the initial data stream comprises a stream of symbols (figures 2, 3, paragraphs 19, 25, 33, 45).

25. Regarding claims 9 and 10, Wiberg further discloses the transmitter comprises a component of a base station / mobile station operable in a wireless communication system (figure 1, paragraph 24).

26. Regarding claims 23 – 32, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claims 1 – 10

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above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claims 1 – 10, respectively.

27. Claims 1 – 6, 8 – 10, 23 – 28, and 30 – 32 are rejected under 35 U.S.C. 102(a) as being anticipated by Proctor, Jr. et al. (US 2003/0035466).

28. regarding claim 1, Proctor discloses a transmitter operable to communicate with a receiver via a wireless communication channel, wherein the transmitter comprises: a processing subsystem (figures 1 – 4); and a transmitter subsystem coupled to the processing subsystem (figures 1 – 4); wherein the processing subsystem is configured to cover different portions of an initial data stream comprising an I/Q pair of modulated symbols to be transmitted on a first wireless communication channel with at least two different spreading codes (figures 1 – 4, paragraphs 56 – 63); and wherein the transmitter subsystem is configured to transmit a resulting final data stream on a first wireless communication channel (figures 1 – 4, paragraphs 56 – 63).

29. Regarding claim 2, Proctor further discloses the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 4).

30. Regarding claim 3, Proctor further discloses the processing subsystem is configured to cover each of the intermediate data streams with one of a set of spreading codes, wherein the set of spreading codes includes the at least two different spreading codes (figures 1 – 4, paragraphs 56 – 63).

31. Regarding claim 4, Proctor further discloses the processing subsystem is configured to multiplex the intermediate data streams into the final data stream (figure 4; where the element proceeding elements 508 is being interpreted as multiplex).
32. Regarding claim 5, Proctor further discloses the spreading codes are different-length spreading codes (figures 1 – 4, paragraphs 56 – 63).
33. Regarding claim 6, Proctor further discloses the spreading codes are Walsh codes (figures 1 – 4, paragraphs 56 – 63).
34. Regarding claim 8, Proctor further discloses the initial data stream comprises a stream of symbols (paragraphs 10, 54).
35. Regarding claims 9 and 10, Proctor further discloses the transmitter comprises a component of a base station / mobile station operable in a wireless communication system (figure 1, paragraph 29).
36. Regarding claims 23 – 28 and 30 – 32, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claims 1 – 6 and 8 – 10 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claims 1 – 6 and 8 – 10, respectively.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

37. Claims 9, 10, 15, 20, 21, 30, 31, 37, 42, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 6219374) in view of Sato (US 6574205).

38. Regarding claims 9, 10, 20, 21, 30, 31, 42, and 43, Kim is not explicit about the transmitter / receiver comprises a component of a base station / mobile station operable in a wireless communication system.

In the same field of endeavor, however, Sato discloses the transmitter / receiver comprises a component of a base station / mobile station operable in a wireless communication system (figure 1).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use the transmitter / receiver comprises a component of a base station / mobile station operable in a wireless communication system as taught by Sato in the system of Kim to provide more diversity.

39. Regarding claims 15 and 37, Kim is not explicit about the processing subsystem is configured to multiplex the intermediate data streams into a decoded data stream.

In the same field of endeavor, however, Sato discloses the processing subsystem is configured to multiplex the intermediate data streams into a decoded data stream (figure 3 element 22).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use the processing subsystem is configured to multiplex the

intermediate data streams into a decoded data stream as taught by Sato in the system of Kim to provide more efficient demodulation.

40. Claims 11 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 6219374) in view of Wiberg et al. (US 2002/0172264).

41. Regarding claims 11 and 33, Kim is not explicit about the processing subsystem is configured to cover an additional data stream to be transmitted on a second wireless communication channel with a single spreading code and wherein the transmitter subsystem is configured to transmit the resulting data stream on the second wireless communication channel, wherein the single spreading code is different than the at least two different spreading codes used to cover the initial data stream.

In the same field of endeavor, however, Wiberg discloses the processing subsystem is configured to cover an additional data stream to be transmitted on a second wireless communication channel with a single spreading code and wherein the transmitter subsystem is configured to transmit the resulting data stream on the second wireless communication channel, wherein the single spreading code is different than the at least two different spreading codes used to cover the initial data stream (figure 2, paragraph 25).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use the processing subsystem is configured to cover an additional data stream to be transmitted on a second wireless communication channel with a single spreading code and wherein the transmitter subsystem is configured to

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transmit the resulting data stream on the second wireless communication channel, wherein the single spreading code is different than the at least two different spreading codes used to cover the initial data stream as taught by Wiberg in the system of Kim to provide proper channelization (paragraph 25).

42. Claims 7, 18, 29, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 6219374) in view of Dahlman et al. (US 6222875).

43. Regarding claims 7, 18, 29, and 40, Kim is not explicit about the spreading codes comprise +-and ++-- codes.

In the same field of endeavor, however, Dahlman discloses the spreading codes comprise +-and ++-- codes (figure 3, col. 3 line 39, col. 5 lines 25 – 65).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use the spreading codes comprise +-and ++-- codes as taught by Dahlman in the system of Kim to reduce buffering in the system (col. 5 line 30).

44. Claims 22 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 6219374) in view of McDonough et al. (US 2003/0156593).

45. Regarding claims 22 and 44, Kim is not explicit about covering an additional data stream to be transmitted on a second wireless communication channel with a single spreading code and transmitting a corresponding data stream on the second wireless communication channel, wherein the single spreading code is different than the at least two different spreading codes used to cover the initial data stream.

In the same field of endeavor, however, McDonough discloses covering an additional data stream to be transmitted on a second wireless communication channel with a single spreading code and transmitting a corresponding data stream on the second wireless communication channel, wherein the single spreading code is different than the at least two different spreading codes used to cover the initial data stream (figures 3, 6, paragraph 8).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use covering an additional data stream to be transmitted on a second wireless communication channel with a single spreading code and transmitting a corresponding data stream on the second wireless communication channel, wherein the single spreading code is different than the at least two different spreading codes used to cover the initial data stream as taught by McDonough in the system of Kim to more diversity.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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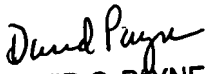
shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aslan Ettehadieh whose telephone number is (571) 272-8729. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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